Office Copy

JOURNAL OF THE CACTUS AND SUCCULENT SOCIETY OF AMERICA

VOL. 1 APRIL, 1930 No. 10

x 0.5 Photo by West

Graptopetalum orpetii, n. sp.

Our first description of a new species;

by Eric Walther, page 183.

Price 35c

JOURNAL of the CACTUS and SUCCULENT SOCIETY of AMERICA

A monthly magazine to promote the Society and devoted to Cacti and Succulents for the dissemination of knowledge and the recording of hitherto unpublished data in order that the culture and study of these particular plants may attain the popularity which is justly theirs. "The Cactaceae," by N. L. Brittou and J. N. Rose, has been adopted by this Journal for purposes of identification. (Membership and subscription $3.00 per year, foreign $3.50. Mail membership application and subscriptions to Secy. Boyd L. Sloane, 1421 Dominion Ave., Pasadena, Calif.)

Managing Editor, SCOTT E. HASELTON, Room 414, 1240 S. Main St., Los Angeles, Calif.
Business and Advertising Manager, G. A. FRICK, 1800 Marengo St., Los Angeles, Calif.

Associate Editors

ARTHUR D. HOUGHTON, M.A., M.D., PH.D., 14714 Chatsworth Drive, San Fernando, Calif.
JAMES WEST, 745 5th Avenue, San Rafael, Calif. MRS. E. A. HARRIS, 158 Groveland Place, San Antonio, Texas

VOLUME I. APRIL, 1930 NUMBER 10

CONTENTS

A New Species of *Graptopetalum*	Eric Walther	183-186
Euphorbia Dactylanthes	G. A. Frick	186-188
Second Annual Cactus Exhibition	Ned Lawrence	189-190
Premium List	Show Committee	190-191
Those Baffling Keys	Ysabel Wright	191-192
Lithops lesliei	James West	193
Propagation of Cacti from Seeds	Eugene R. Ziegler	194-196
Two Interesting Species of Cereus	E. B. Babcock	196
President's Column	R. E. Willis	198
Secretary's Notes	Boyd L. Sloane	199

EDITOR'S NOTES

Cactus history is being made each month by the ever increasing interest of the members of the Cactus and Succulent Society. And now comes the Second Annual Cactus Show to be staged at the Ambassador Auditorium in which plans are being made to show to 30,000 people. Our President, Mr. Willis, has been giving days and weeks of his time to promote this wonderful show, with the dependable co-operation of Mr. Ekdom, Mr. Frick, Ned Lawrence, Mr. Hurley and other members of the committee. If we but realized the time that these enthusiasts are so generously giving, some of us would have nothing but praise for these men who can have no personal gain except the pleasure they derive.

Letters of appreciation are ever increasing and volunteers are becoming more numerous. Mrs. Wright of Santa Barbara is sending very valuable material for our magazine. Ernest Braunton has given us pages of interesting cactus data. Dr. N. L. Britton has promised us an article. Our loyal member, Eric Walther, is giving us the honor of publishing his new species, which alone will give our Journal greater scientific value. Many other articles have been promised or are waiting publication. Any copy not used will be returned to any contributor and we can never have too much cactus and succulent material. These new contributions with that of our old reliable writers, make the future of the "Journal" bright, indeed.

Workers too, have volunteered. Mrs. Edward Lawrence (known as Mrs. "Ned" Lawrence) has kindly consented to share the burden of the Editor and may be addressed as Assistant Editor. Her many years of newspaper work and her enthusiasm make Mrs. Lawrence a most valuable addition to our staff. Among her other work she will conduct a "Cactus Calendar" and a list of plants in bloom should be sent in each month. Any mail addressed to Mrs. Lawrence at 376 N. Ave. 57, Los Angeles, will receive prompt attention.

The funds received from the show last year have not only made the "Journal" possible, but make the 1930 show an assured success.

Join the parade and help put over this big Cactus Show and you will be proud that you are affiliated with The Cactus and Succulent Society of America.

GRAFTING EPIPHYLLUM ON OPUNTIA

Many of the *Opuntias* make good grafting stock for the *Epiphyllums*. The best way is to graft on large old specimens of *Opuntias* with plenty of sap and do not remove the branches. There used to be some very old large plants here in Los Angeles which bore great plants of *Epiphyllum*. Graft by just making a cleft *across* the top of a joint and insert a good fat piece of the graft with about six areoles. Pin with a couple of spines and shade for a few days. The percentage of takes should be high.

DR. A. D. HOUGHTON.

I am reading with high appreciation every number of the "Journal."

N. L. Britton.

I am much interested in the "Journal" and the work of your Society.

L. H. Bailey,
Ithaca, N. Y.

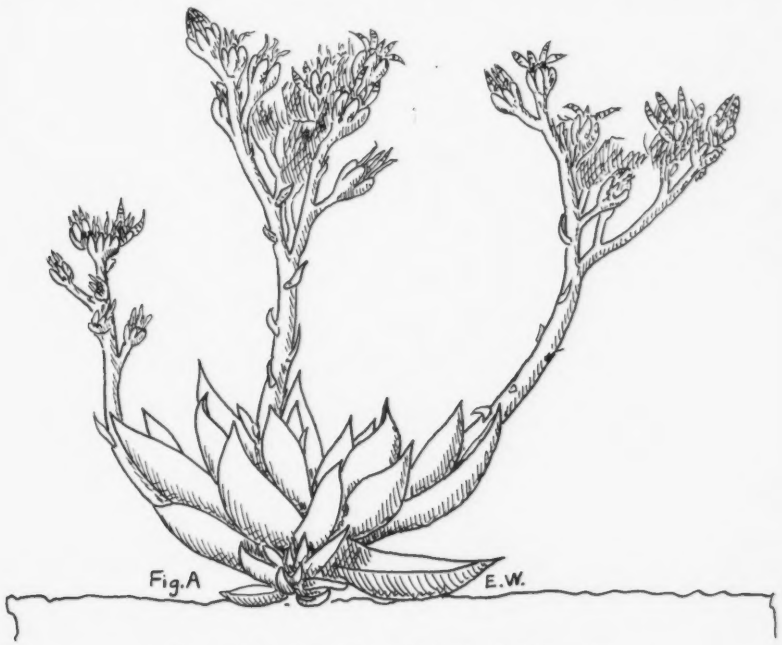
A NEW SPECIES OF GRAPTOPETALUM

By ERIC WALTHER

Graptopetalum orpetii sp. nov. Herba acaulis, omnino minutissime papulosa, foliis rosulatis carnosis cuneatis oblongis-oblanceolatis acuminatis cuspidatis, supra concaviusculis, dorso rotundatis, apicibus leviter incurvis 20-35 mm. longis; corollae-segmentis valde patulis, transverse-fasciatis, calycis-lobis turgidis corollae-tubo longioribus.

Graptopetalum is a genus of the Crassulaceae taking its name from the curiously marked petals, and is another of Dr. Rose's many segregates from *Cotyledon*, which last according to him is not represented in the new world. Until recently the former genus was thought to consist of only 4 species, but we here describe what is undoubtedly a valid, new species, besides transferring the plant commonly known as *Byrnesia weinbergii* to what appears a more logical generic position. In regards to the latter, Rose himself hinted that it was close to *Graptopetalum;* and it is certainly difficult to maintain a monotypic genus on vegetative characters alone. Other genera very similar in floral structure are *Altamiranoa, Gormania* and *Stylophyllum*. The whole question of generic delimitation in the *Crassulaceae* is still far from being finally settled, and A. Berger's treatment in the new edition of Engler & Prantl's "*Naturliche Pflanzenfamilien*" is awaited with curiosity.

The plant on which the description of this new species is based was found by Mr. Ed. Howard of Santa Monica on the road to the Boyce-Thompson Arboretum at Superior, Arizona, in the spring of 1929. With the approval of the discoverer we name it after Mr. E. O. Orpet of Santa Barbara, as a small recognition of the latter's many services not only to Horticulture in general, but the cult of Succulents in particular. At this time the writer also wishes to acknowledge his indebtedness to Miss Alice Eastwood in granting access to the type of *G. rusbyi*, as well as for kindly reading proof; and to Mr. James West for gracefully resigning his interests in the matter and furnishing the accompanying photographs.



Graptopetalum orpettii n. sp. (Habit-sketch of type; x1.)

The new species comes closest to *G. rusbyi,* but differs from the latter in its relatively longer and more pointed leaves which are distinctly concave above and upcurved towards the apex, in the less prominently marked corolla-segments and last, but not least, in the decidedly shorter corolla-tube. It also resembles *G. pusillum,* the type of the genus, at least in its foliage, but differs from that in its longer, blunter and much more turgid calyx-lobes, as well as the more gradually attenuate carpels, which latter are only slightly longer than the sepals at anthesis. In order to make the position of the new species quite clear we give a short key below to all the known species.

GRAPTOPETALUM Rose. *(Crassulaceae)*

In Cont. U. S. Nat. Herb. Vol. 13:9: 296; 1911.

Generic definition:

Stamens twice as many as petals, free, becoming recurved when stigmas are receptive; petals 5 or 6, not appendaged within, connate to the middle, radiately spreading above, more or less distinctly marked with dots or bands; sepals about as long as corolla-tube. Type *G. pusillum* Rose.

LIST OF SPECIES, ETC.:

G. bartramii Rose; Addisonia, Vol. 11.1:1; plate 353, 1926.
(Flux Canyon, Patagonia Mts., Sta. Cruz Co., Arizona.)

G. orpetii new species, here described.

G. pachyphyllum Rose; Addisonia, Vol. 7:3:45, plate 247; 1922.
(Cadereyta, Queretaro, Mexico.)

G. pusillum Rose; Cont. U. S. Nat. Herb.; Vol. 13:9:296, plate 52 and fig. 55, 1911.
(Durango, Mexico.)

G. rusbyi (Greene) Rose; Addisonia, Vol. 9:2:31, plate 3-4; 1924.
COTYLEDON RUSBYI, Greene, Bull. Torr. Bot. Club; 10:125; 1883 (*1).
DUDLEYA RUSBYI, Britton & Rose, Bull. N. Y. Bot. Garden; 3:13:1903.

G. weinbergii (Rose) new combination (*2).
ECHEVERIA WEINBERGII, Theodosia B. Shepherd, Cat. 37, 1912.
COTYLEDON PARAGUAYENSIS, N. E. Brown; Kew Bull. 1914:208.
BYRNESIA WEINBERGII, Rose; Addisonia, Vol. 7:3:37; plate 243, 1922.

(*1) Some uncertainty seems to exist as to the exact type-locality. What appears to be a part of the type-collection is in the herbarium of the California Academy of Sciences. This was collected by H. H. Rusby in 1881 in Arizona and is labelled COTYLEDON RUSBYI in Greene's own handwriting.

(*2) The origin of this species is uncertain, and it is almost certainly not from Paraguay, according to the statement of Mr. Frank Weinberg himself. Under strict observance of the rules of priority Brown's specific name should perhaps be used, even if quite meaningless, since a nursery-catalog is hardly a scientific publication. In order not to do too much violence to accepted usage we follow Rose and retain the old specific name. Under N. E. Brown's description here cited he makes some very pertinent remarks anent the means by which self-pollenization is prevented. When the anthers are discharging pollen the styles are curled together and the stigmas are barely differentiated. Only after the stamens have become reflexed away from the styles do the latter spread out slightly and the stigmas become papillose and receptive. We have observed exactly the same process in *G. orpetii.*

KEY TO THE SPECIES:

A. Lvs. relatively thin; corolla-segments with regular, transversely banded markings.
  B. Calyx-lobes turgid, obtusish; carpels gradually attenuate into styles.
    C. Corolla-tube shorter than calyx-lobes; lvs. oblong-oblanceolate, concave above, upcurved towards apex ..... **G. orpetii** n. sp.
    CC. Corolla-tube longer than calyx-lobes; lvs flat above, rhomboid-obovate ..... **G. rusbyi**
  BB. Calyx-lobes scarcely turgid, usually acute; carpels mostly abruptly attenuate into styles.
    C. Inflorescence an elongated panicle to 25 cm. long; corolla-tube shorter than calyx-lobes ..... **G. bartramii**
    CC. Infl. a few-flowered cyme about 10 cm. tall; corolla-tube longer than calyx-lobes ..... **G. pusillum**
AA. Lvs. relatively thick and turgid; markings of corolla-segments scattered, not in regular, transverse bands.
  B. Lvs. to 2 cm. wide or more, apiculate; caudex evident; plant of the habit of an Echeveria ..... **G. weinbergii**
  BB. Lvs. smaller, nearly terete, blunt ..... **G. pachyphyllum**

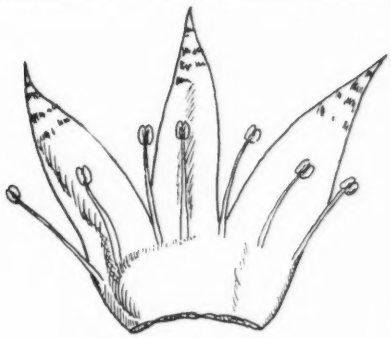


Fig. 3.

Fig. 2.

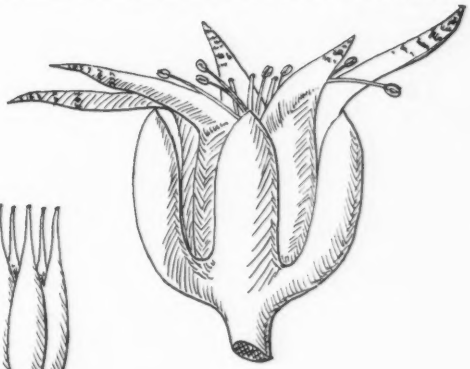


Fig. 1.

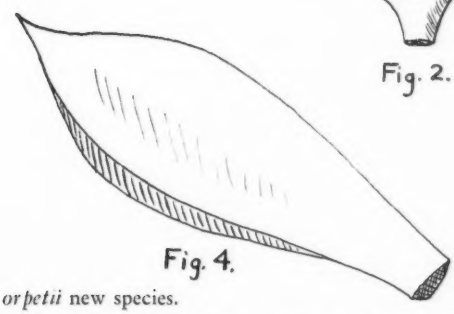


Fig. 4.

Fig. 5.

G. orpetii new species.

Fig. 1 Side-view of corolla (x5); Fig. 2 Side-view of carpels (x5); Fig. 3 Corolla, opened out, showing 3 segments with the attached stamens (x5); Fig. 4 A single leaf (x2.5); Fig. 5 Cross-section of leaf (x5)

Graptopetalum orpetii, *new species.*

(Type collected in Arizona, on road to Boyce-Thompson Arboretum at Superior, Arizona, by E. Howard, 1929, deposited in herbarium of California Academy of Sciences, San Francisco, sheet No. 170322. Description from living plant growing in greenhouse of V. Reiter, Jr., San Francisco. Photo by James West. Drawings by the author.)

Plant acaulescent, cespitose, rosettes to 7 cm. in diameter, each with as many as 25 leaves;

Leaves oblong-oblanceolate, cuspidately-acuminate, cuneate towards base, 20 to 35 mm. long and 6 to 10 mm. broad above middle, courge-green (*3) below, light elm-green (*4) above, glabrous, finely punctate with many elongate papillae in close longitudinal rows, strongly convex below, shallowly concave above, slightly upcurved towards the end;

Inflorescence of several lateral, simple or cymosely branched scapes 6 to 9 cm. tall;

Peduncle 2 to 3 mm. thick;

Bracts scattered, linear or nearly so, caducuous;

Branches 2 to 3, ascending-spreading, secund racemes each with 4 to 7 flowers;

Pedicels 3 to 5 mm. long, about 1 mm. thick;

Flowers erect, mostly 5-parted;

Calyx-lobes turgid, 5 to 7mm. long, appressed to corolla, oblong, obtusish, finely mucronate, punctate and colored as the leaves, but often with some pigmented papillae towards apex, *longer* than corolla-tube;

Corolla conspicuously pentagonal in bud, to 14 mm. in diam. when open;

Segments spreading radially, keeled on back, chanelled on face, narrowly-deltoid to lanceolate, acuminate, about 8 mm. long by 2 mm. wide at base, united for about one-third to one-fourth their length, ground-color light chalcedony yellow (*4), but at apex with relatively few transverse bands or markings of eugenia-red (*4), the dark coloration being due

(*3) French for some kind of squash; see footnote *4.

(*4) Color-nomenclature after Ridgway.

to the colored cell-sap of certain groups of epidermal papillae, and possibly more marked in plants growing in their native habitat;

Corolla-tube distinctly shorter than the calyx-lobes;

Stamens 10, attached to corolla-tube near its upper end, not merely adnate to the latter, at first erect, widely spreading after pollen is shed, and even becoming reflexed when stigmas are receptive, shorter than the petals;

Anthers brownish, quadratic in outline;

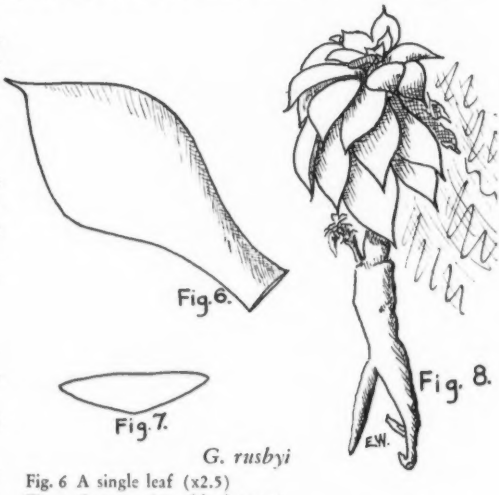
Carpels white, slightly longer than sepals, shorter than stamens, gradually attenuate into styles;

Stigmas at first indistinct, later papillose and greenish when receptive;

Hypogynous scales transverse, lunate-reniform;

Fruit as yet unknown.

Editor's Note: Mr. Walther, 2667 McAllister St., San Francisco, would be glad to receive communications from any one desiring to make any comments.



G. rusbyi

Fig. 6 A single leaf (x2.5)
Fig. 7 Cross-section of leaf (x2.5)
Fig. 8 Habit sketch, from living plant collected by Miss Alice Eastwood on Apache trail, Arizona, May, 1929 (x1.)

EUPHORBIA DACTYLANTHES

By G. A. Frick

Euphorbia globosa Sims, (Sect Dactylanthes) is to be found in very few collections of the United States. Many collectors have a plant by this name, due to a mistaken identity by one Los Angeles dealer selling *E. ornithopus* for *E. globosa;* the former being somewhat similar in appearance, especially when the latter is grown under glass, where it assumes a very different form than in its natural habitat of the Zwartkops district of South Africa. Cultivated in the hothouse the shoots become elongated and cylindrical, which is characteristic of *E. ornithopus* and could be easily mistaken for this plant.

E. globosa has adopted a curious mode of growth. It leads a half subterranean life with only the upper end of the stem and twigs showing above the surface of the ground; this serves as a protection against periods of drought; in dry weather the plant shrinks owing to loss of moisture, and draws itself deeper under ground, thus affording better protection from the sun and heat than at the surface. The photograph at the right shows how the small plants grow on the end of peduncles until by their own weight they droop to the ground and send out roots, thus establishing a new plant—a unique method of propagation characteristic of this entire group.

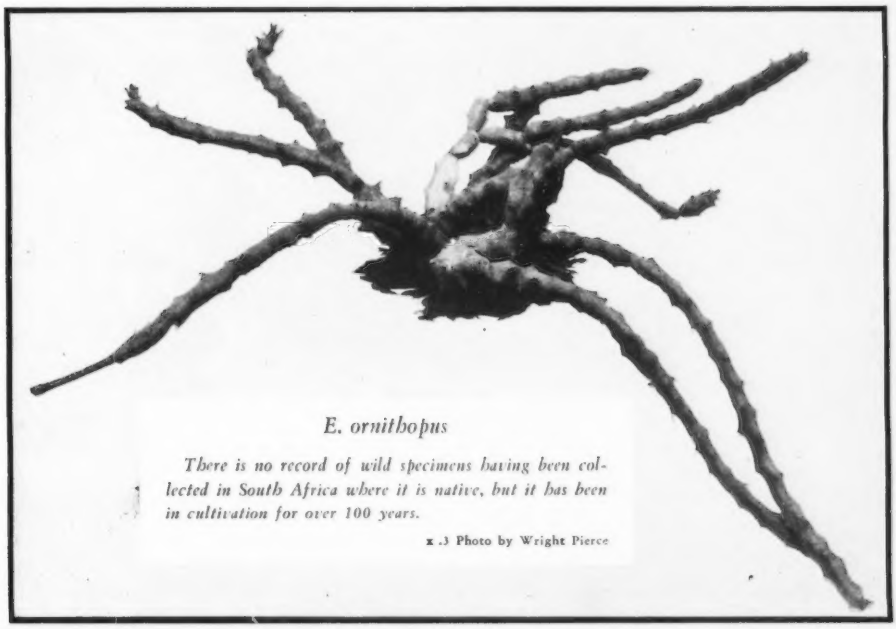
x .3 Photo by Wright Pierce.

E. globosa, like all the dactylanthes group, is a very dwarf plant consisting of a small clump of round branches constricted at their origin or renewal of growth point, into globose, clavate or cylindric joints, usually thicker than long, from one-half to one inch in diameter, and connected together like beads on a string; is spineless, and of a dull green color, turning purplish when exposed to the sun.

E. ornithopus is closely allied to *E. globosa,* but is decidedly different in appearance in its elongated cylindric stem-joints, which branch close to the ground in a straggling fashion, often one over another; one to four inches long and usually one-fourth inch in diameter; color is dark green, like *E. globosa* and also turns purplish in the sun; leaves are small, rudimentary and deciduous; the bracts are from a quarter to half inch long, and forked very much resembling a bird's foot, hence the name "ornithopus" (Greek for bird's foot). There are two forms of this plant, the short jointed and the long jointed form, but the flower of both are the same, consequently this difference is not sexual, as both develop fruit.

E. tridentata is also a dwarf plant of this group, spineless, branching from the base, ascending branches are somewhat spreading, one to six inches long, one-third to one-half inch thick; is also cylindric, slightly tapering upwards, having a slightly prominent whitish leaf-scar; color dark green; leaves very small and sessile, soon deciduous. This plant is listed in Berger's "Sukkulente Euphorbien" as *E. anacantha,* Haw. a synonym, but *E. tridentata* Lam. holds priority. This species is not so well known among collectors, and the only plant known to the writer is in the Desert Rare Plant Gardens of Escondido, California.

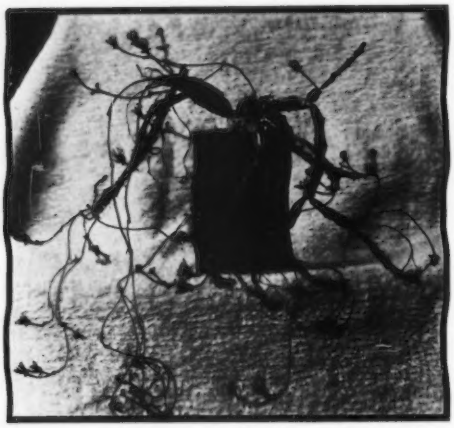
Until recently the *Dactylanthes* group consisted of the three above mentioned species, *E. globosa* Sims., *E. ornithopus* Jacq. and *E. tridentata* Lam., but many new discoveries of *Euphorbia* have been made in recent years in Africa which have added two more species to this interesting section, and today we have *E. pseudoglobosa* Marl. and *E. susannae* Marl. making five in all. *E. pseudoglobosa* was discovered by Dr. John Muir in the Krombeeks river district of Riversdale, South Africa, and *E. susannae* later by Mrs. Sussanna Muir in the Little Karoo, April, 1925; the habitat of the latter was a flat hill of small angular pebbles between which the plants were completely wedged in flush with the surface; the twigs being seen as green discs between the pebbles. In July of the same year, Dr. Rudolph Marloth found this same plant and named it after Mrs. Muir's christian name. The



E. ornithopus

There is no record of wild specimens having been collected in South Africa where it is native, but it has been in cultivation for over 100 years.

x .3 Photo by Wright Pierce



x 0.1 Photo by W. I. Beecroft

E. tridenta (note the length of peduncles)

description by Dr. Marloth in the South African Garden & Country Life[1], June, 1929, page 191, is as follows:

E. pseudoglobosa

Plant devoid of old peduncles or other spines. The succulent cylindrical or more or less globose stem remains embedded in the ground and gradually produces several globose branches connected with the stem by a very short narrow part. Stem and twigs form a compact body nearly flush with the ground, as in wild plants of *E. globosa*, but while in *E. globosa* this process continues until there may be fifty such twigs, in this species the largest number was six. Twigs 12 to 15 millimetres in diameter, with eight blunt ridges in the upper part, the podaria (fields of the surface) subconical, rather flattish, wider than long. Leaves not seen.

E. pseudoglobosa, Marl., ¾ nat. size.

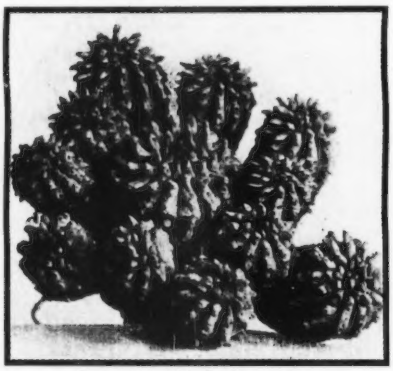
[1]Subscriptions can be mailed to Box 388, Cape Town, So. Africa. Please mention the Journal.

Plant dioecious, the flowers aggregated on the apex of the twigs. Male plants only seen. Flowers on simple peduncles about 2.5 mm. long. The involucre 2 mm. long and 4 mm. in diameter, supported by three bracts below the cyathium and one or two others lower down, all broadly linear or spathulate, fringed at the apex. Lobes of involucre spathulate, fringed at the apex, one half the width of the glands. Glands orbicular or oblong, entire, suberect, the colour of dark verdigris. No rudimentary ovary present.

It will be seen from this description and the illustrations of the two species discussed that this is a most remarkable case of convergence in the development of the vegetative organs of two genetically so different plants.

Euphorbia Susannae

Young plant turbiniform (top-shaped) with a long tap root and a rounded apex. 12 to 16-ridged, the podaria of the ridges elongated into narrow triangular acute teeth straight or more generally pointing downwards. The plant is embedded in the gravelly ground, showing only the hemispherical apex, 25 to 35 millimetres in diameter, of which three-fourths belong to the solid body and one-fourth to the ridges and teeth. Older plants possess numerous globose or globoso-cylindrical branches arising below the surface of the ground and appearing as a ring of apparently independent green discs at a little distance from the central



E. Susannae, Marl. ½ nat. size.

body, all flush with the ground. Leaves present only on young shoots and reduced to apical bristles, one on each of the youngest podaria, but soon falling off and leaving a triangular brown mark. Plants without old peduncles or other spines.

Plants dioecious, the cymes crowded at the apex in the axils of the podaria. Male cymes usually only two-flowered or even one-flowered. Peduncles deciduous, 4 mm. long, bearing two minute bracts at the base and five linear bracts just below the cyathium. The involucre only 3 mm. in diameter and just a little longer, the segments finely fimbriate at the upper end. The glands transversely oblong, quite entire, greenish yellow and nearly touching each other, the inner and the outer margins nearly straight. Stamens with bearded filaments, the anthers yellow, but in some cases the anther replaced by a red gland. No abortive ovary present.

Female flowers similar but smaller and sessile between the apical teeth. Ovary globose, sessile, glabrous. Styles hardly connate at base, the branches spreading, the ends notched. Capsule globose, deeply 3-grooved, 2 mm. in diameter.

SECOND ANNUAL CACTUS SHOW

By NED LAWRENCE

Let us take swift survey of the coming Cactus Show.

It has been resolved to hold it this year in Los Angeles for four successive days, May 29-June 1, inclusive, at the Ambassador Auditorium.

Last year the exhibition was staged at Rust's Nursery in Pasadena during August. *It was handicapped at the outset by being held at a season* when cactus and succulents are suffering from long exposure to summer drouth, when more people are out of town and fewer visitors minded to give heed to plant-life than usual, and yet—*the Exhibition was a big success, scientifically, financially and popularly.*

Now this year it is hoped to surpass the previous show by reason of immense advantages. We are showing in a city thirty times as large as Pasadena; at a season when our plants will be lush and vivid in growth and coloring, and many of them in flower; and we will have the predisposition of the public in our favor because of the holiday season, the popular sentiment that last year's show was something by no means to be missed, and increasing interest in the acquisition and culture of cactus and kindred xerophytes.

Our Cactus Society is a mere youngster, little more than a year old. But it has brought together in community of interest hundreds of persons who have sought to collect and cultivate these plants native to the Americas. It was formed at a time when it was becoming a nation-wide fad to have a little cactus in every home. Consequently the publication of this "Journal" by the Society ministered to public desire, and served to heighten general curiosity about the extraordinary span and variety of cacti and succulents.

There is not a member of the Society who is not keenly aware of the change that has come in public opinion about cactus; where once a collector of these prickly "horrid weeds" was regarded as not quite balanced, if not exactly crazy, he is now constantly importuned to know where to get cacti, how to care for them after acquisition, and what to call them by name.

The "Journal" goes far and wide, and is read from cover to cover. Its editor is overwhelmed with requests for back numbers. All attesting to the fact that the Society is doing something which meets with popular acclaim and hearty acceptation.

And the best thing we can do is to give a public exhibition which will dwarf any similar show ever given anywhere before. This show will be more comprehensive than our previous one. It *will display more rare individual plants, greater* variety and scope of classifications, and perhaps keener contests for supremacy.

Many of the little faults and mishaps of the first show will be avoided by virtue of that experience, *and an eminent effort will be made to increase the general interest in the exhibition by* catering to what have been revealed as popular sentiments.

For instance, last year it was found that many spectators who came to look were moved to buy, *and some difficulties were encountered here. This* year a department will be set aside where plants may be offered for sale, and a checking system is devised whereby a purchaser may take out his prize without being subject to inquisition and proving innocence at the gate. This department will be under the supervision of H. B. Brochelle.

The prize-list this year will be more extensive and better arranged than before. It is contemplated to give not only ribbons, but cups or other trophies and valuable premiums in rare plants or in cash awards.

At this time the committee on premiums and prizes is engaged in making up the list. Donations of prizes will be gladly accepted and warmly appreciated and proffers of them may be made either to the chairman of the committee, Mr. Clyde Hurley of Pasadena, or to the Secretary or President of the Society.

Last year the Society had no funds in its treasury which it could devote to prize-moneys, publicity or contingent expenses. The show was a venture, and its success put several hundred dollars in the Society's fund. This year the prospectus calls for considerable outlay in advertising, decorations and the provision of entertainment. It is anticipated that the revenues may be proportionate.

What is now most important is that every member of the society lend aid and furtherance to the success of this coming exhibition.

It is hoped that everyone who can will exhibit, and all who have such intention should communicate with the Show Committee, making application for space to Chairman J. A. Ekdom. The committee will be announced with all other details in the next Journal.

Those who contemplate sending in plants to be offered for sale should give that detailed information to Chairman Brochelle.

Inquiries respecting other matters in connection with the show may be addressed to the Secretary of the Society, Boyd L. Sloane, 1421 Dominion Avenue, Pasadena, who also is secretary of the Show Committee.

The President, Librarian, Treasurer and members of the Executive Board also are functioning on the Show Committee with some accessions from the active membership.

The judges' bench will be filled with experts both from within and without the society membership, and their duties are divided to give three judges of cacti and the same number to succulents.

The honor of winning a prize—even a second or third—is not to be lightly despised, for the competition is likely to be close and keen. The list of classes to be judged for awards is given below.

PREMIUM LIST

A1 SWEEPSTAKES: Judged by the combined judges. One prize only.
A2 BEST STAGED COLLECTION: Large or small.
A3 BEST RAREST CACTUS SHOWN.
A4 BEST RAREST SUCCULENT SHOWN.
A5 LARGEST COLLECTION OF DIFFERENT CACTI.
A6 LARGEST COLLECTION OF DIFFERENT SUCCULENTS.
A7 BEST COLLECTION OF GRAFTED PLANTS.
A8 LARGEST COLLECTION OF DIFFERENT CRISTATES AND MONSTROSAS.
A9 BEST COLLECTION OF FREAKS: Unusual growths other than crests and monstrosities.
A10 BEST EXHIBIT FROM A DISTANCE: More than 200 and less than 700 miles from Los Angeles.
A11 BEST EXHIBIT FROM A DISTANCE: More than 700 miles from Los Angeles.
A12 BEST COLLECTION OF CACTUS AND SUCCULENTS: Entered by Juniors under 18.
A13 BEST COLLECTION OF SEEDLINGS: Cactus or succulents under 2 years old.
B1 BEST COLLECTION OF PERESKIAS AND PERESKIOPSIS.
B2 BEST COLLECTION OF OPUNTIAS.
B3 LARGEST COLLECTION OF EPIPHYLLUMS.
B4 BEST COLLECTION OF COLUMNAR CEREANAE: This includes Cereus, Cephalocereus, Trichocereus, etc. See Vol. II, Pages 1 and 2, B. & R.
B5 BEST COLLECTION OF HYLOCEREANAE: This includes the vine-like, climbing, trailing or pendant cacti. See page 183, B. & R.
B6 BEST COLLECTION OF ECHINOCEREANAE: This includes Echinocereus and Echinopsis, etc. See Vol. III, page 3, B. & R.
B7 BEST COLLECTION OF ECHINOCACTANAE: This includes Ferocactus, Echinocactus, Astrophytum, etc. See Vol. III, page 77.
B8 BEST COLLECTION OF CORYPHANTHANAE: This includes Caryphantha, Neomammillaria, etc. See Vol. IV, page 3, B. & R.
B9 BEST COLLECTION OF RHIPSALIDANAE: This includes Rhipsalis, etc. See Vol IV, page 208, B. & R.
B10 BEST SPECIMEN OF ZYGOCACTUS OR SCHLUMBERGERA.
B11-100 BEST INDIVIDUAL CACTUS PLANT OF ANY GENERA: Entries under this classification must be show standard to win.
C1 BEST COLLECTION OF EUPHORBIAS.
C2 BEST COLLECTION OF MESEMBRYANTHEMOIDES.
C3 BEST COLLECTION OF ECHEVERIAS: Including Dudlea, Stylophyllum, etc.
C4 BEST COLLECTION OF ALOES.
C5 BEST COLLECTION OF HEWORTHAS, GASTERIAS AND APRICA.
C6 BEST COLLECTION OF SEDUMS.
C7 BEST COLLECTION OF SEMPERVIVUM.
C8 BEST COLLECTION OF CRASSULA.
C9 BEST COLLECTION OF AGAVES.
C10-20 BEST COLLECTION OF ANY OTHER GENUS OF SUCCULENTS.
C21-100 BEST INDIVIDUAL SUCCULENT PLANT OF ANY GENERA; Entries under this classification must be show standard to win.

D1 BEST COLLECTION OF XEROPHITES: In fancy pots or containers.
D2 BEST COMEDY LAYOUT: Must show horticultural skill.
D3 BEST MINIATURE CACTUS AND SUCCULENT LANDSCAPE: Amateur. Must be over 2 square feet and under 6 square feet.
D4 BEST MINIATURE CACTUS AND SUCCULENT LANDSCAPE: Professional. Must be over 2 square feet and under 6 square feet.
D5 BEST XEROPHYTE BOWL: Amateur.
D6 BEST XEROPHYTE BOWL: Professional.
D7 BEST XEROPHYTE BOWL: Junior under 18.
E1 BEST DISPLAY OF METHODS OF PROPAGATION OF CACTI AND SUCCULENTS.
F1 BEST EXHIBIT OF CACTUS GROWING AND HANDLING AIDS: Special tools, etc.
G1 BEST STRAWBERRY JAR: Succulents predominating.
H1 COLLECTION OF INSECT PESTS AND PARASITES, INIMICAL MOULDS AND FUNGI.
J1 BEST COLLECTION OF PICTURES OF CACTUS AND SUCCULENTS: May be either or both.

(SEE PRIZE LIST IN NEXT ISSUE)

Every member will receive an entry blank about April 15th. Plan your exhibit now.

THOSE BAFFLING KEYS

By YSABEL WRIGHT, *Illustrations by* MARGARET KINCHER

EDITOR'S NOTE: From Santa Barbara comes the first of a most valuable series illustrating botanical terms as applied to Cactus. Next month the terms used in describing cactus spines will be of equal interest.

Am I the only eager amateur the warmth of whose enthusiasm to determine the names of cacti by reference to a key has sometimes cooled because of inability to visualize the shapes described by words that are merely words and convey no meaning?

As one gropes, more or less blindly, through the labyrinth of technical terms with which all keys must teem, how discouraging it is to read in the dictionary that obovate means inversely ovate. The words convey no clear mental picture to be applied to the actual cactus.

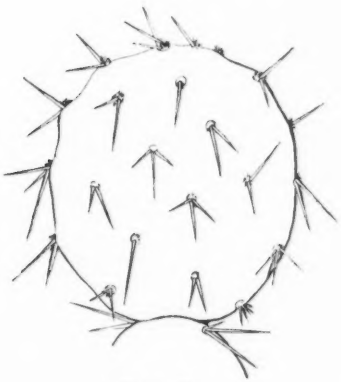


Fig. 1

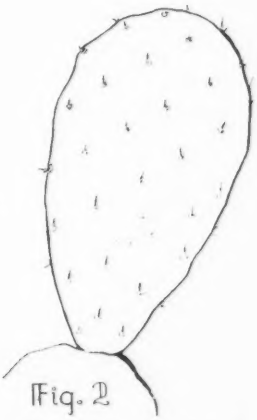


Fig. 2

Fig. 3

I have tried in vain to find an illustrated botanical dictionary. I have searched through many

books and pamphlets for pictures to help me visualize the forms.

Mr. Eric Walther, in his valuable contribution on "Botanical Keys" in the issue of February, 1930, of the Cactus Journal kindly included some excellent pictures to illustrate a few botanical terms, but so far as I am able to learn, no one has systematically supplied pictures to show the meaning of the descriptive terms used so freely in keys for the determination of cactus species.

So we beginners flounder along and guess at the shapes to which learned verbal appellations are attached.

I hope that these pictures, drawn by my faithful collaborator, Miss Margaret Kincher, illustrating some of the more commonly used terms, will help and encourage other beginners.

Let us take, as a typical example, six different *Opuntia* joints (which, by the way, many a beginner has thought to be leaves). If the pictures give a clearer conception of an obovate, or orbicular, or repand joint than the verbal description in the dictionary we shall feel pleased to have made it just a little easier for some to find out what the specimens in their gardens really are, and so added to their eagerness to push their studies further.

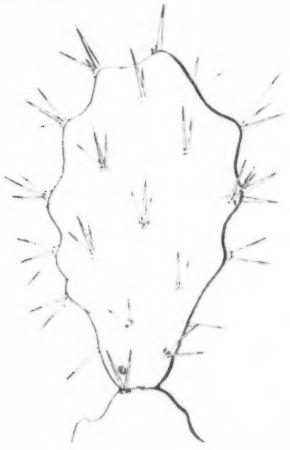


Fig. 4A

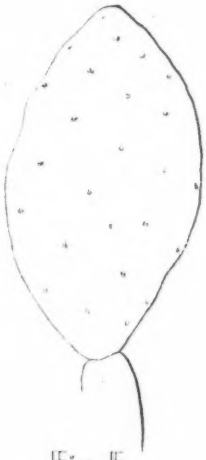


Fig. 4B

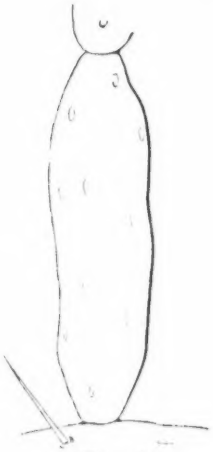


Fig. 4C

GLOSSARY

1. **Orbicular**—perfectly or very nearly circular; said of a flat body like a leaf or petal.
   As in *Opuntia setispina.*
2. **Obovate**— inversely ovate; egg shaped with the point of attachment at the narrow end.
   As in *Opuntia affinis.*
3. **Oblong**— elliptical, the length being twice or thrice the width, as in many leaves.
   As in *Opuntia maxima.*
4. **Repand**— having a wavy or uneven outline, tending to become sinuate (that is winding in and out as a margin).
   As in *Opuntia dillenii.*
5. **Elliptical**— long, oval, and equally rounded at both ends.
   As in *Opuntia ficus-indica.*
6. **Elongated**—very slender in proportion to length.
   As in *Opuntia clata. var. elongata.*

Editor the Journal:

The islands of Trinidad and Tobago off the coast of Venezuela, together with the neighboring coast of South America, is a region where a profusion of tropical cacti is to be found. Mr. W. E. Broadway, who lives in Trinidad and has collected for many years, has a world wide fame as a collector. In a recent letter he expresses his desire to become a member subscriber. He charges a small fee for collecting cacti, the highest price for rare Cephalocereus being about 72 cents.

Courtesy F. A. Haage, Jr.

LITHOPS LESLIEI N. E. Br.

By James West, San Rafael

This plant is one of the best of the "Stone-faces," being both attractive in appearance and easy to grow. It has been known to cultivation longer than most of its genus.

The illustration, representing a pan of seedlings, shows sufficiently their general appearance. In more mature plants the top becomes somewhat flatter, and the angle between it and the sides more sharply defined, at least in field-grown specimens, also the halves of the top become more kidney shaped. The color is a very deep coppery bronze with darker surface markings.

In shape it belongs to that group of species of the genus inhabiting the more easterly and southerly parts of its range, Transvaal and E. South-West Africa, which is characterized by flat tops, tightly closed slits, small and distinctly defined markings and solitary habit, while towards the West, (near coast at Luederitz Bay, etc.) the species tend increasingly towards rounded tops, separated by a deep fissure, diffuse markings often merging into a "window," and more cespitose habit. (Example: *L. optica* N. E. Br.)

L. lesliei grows in the region of the Vaal and Orange Rivers, S. Transvaal and Griqualand West, generally in a red ironstone exactly matching it in color, so that it is said to be extremely hard to find, except when expanding its flowers of brilliant yellow.

NOTE: Marloth considers this species as identical with *L. turbiniformis (M. bookerii* Berg.) thinking that the difference (smooth unwrinkled top) is only a seasonal variation of one and the same species.

A well illustrated catalogue listing over 500 varieties of cactus and succulents is off the press and is being distributed by the McCabe Cactus Gardens of San Diego. Price is 25c which is refunded with the first order of $2.00 or more.

CACTUS NAMES

Mrs. CHARLES BLY, Kingman, Ariz.

I have just finished reading my "Cactus Book"—the Journal—and was quite interested in two articles; one, the Col. Kewen's local and Latin names for various plants; the other, which interested me most, was the article on *Ferocactus.*

When I first came to Arizona I called our local ones *Echinocactus wislizeni.* Later I was told that I was wrong and that they were really *E. lecontei,* the center spine "wide, flat and drooping, hooked." Recently friend Hess, on seeing my plants, said that they are *E. wislizeni.* He did not study them minutely, however. Locally they are known as Barrel, and by some as Niggerhead.

Since studying the local ones for years, I came to know a similar form from southern Arizona, *E. wislizeni,* locally called Barrel and Visnaga. This whole plant is darker, with fewer spines, and in place of the yellow flower which goes with the ones known here as *E. lecontei* it has what I would term cherry, or brick-red colored flowers. They are much prettier than the yellow. In fact, the whole plant is more comely as a whole than these of northern Arizona. But then our local ones have all the advantage in spine coloring.

Some of my plants have been called *E. cylindraceus,* and I have had what was said to be genuine cylindraceus. Some plants have much narrower and more twisted spines than others. I admit, with thirty years of cactus growing, that I cannot tell which is which. Will someone give us some definite information along this line?

Now about our local names: Our *Mammillaria,* for the most part, have hooked spines and are by some called fish-hooks, by others pincushion, strawberry, and "chiletos" (this last from the red-pepper form and coloring of the seed vessels). Then again others call our *Echinocereus mohavensis* the strawberry cactus from its form and color of seed vessel. *Opuntia bigelovii* is known all over Arizona as jumping, or ball, cactus. And I am told that *Opuntia crinacea* is the real O. *ursina,* called grizzly bear. I have my doubts about this. There is surely a big difference in the growth of one from Death Valley and our native ones when grown here side by side in the same soil conditions. The one from California has much finer, whiter, and silkier spine growth; in fact, to my way of thinking, the California plant has all the advantage over the true *Opuntia crinifera* as an all-around, and as a bedding, variety. *O. crinifera* will grow stout yellow spines when set out of doors.

I would like to add that I believe that one-half the mixup in names is due to someone's poor spelling or someone's poor reading.

Echinocactus johnsonii, or *Ferocactus johnsonii* is mostly known here as niggerhead. In some places *Echinocactus horizonthalonius* takes that title.

FROM OUR PRESIDENT EMERITUS

Secretary, Cactus and Succulent Society.

I am deeply mindful of the honour conferred upon me by The Cactus and Succulent Society, and hope that I may be able to continue in the work which we all so much enjoy.

I wish great success for the society in the ensuing years.

Very sincerely,

Arthur D. Houghton.

PROPAGATION OF CACTI FROM SEED

By EUGENE R. ZIEGLER, *Spencerport, N. Y.*

Before considering the method I use to propagate cacti from seed I would like to tell of the circumstances which led me to my present method. Some years ago I purchased a packet of mixed cactus seed from one of the large seed supply houses. Not knowing anything regarding cacti in general and seedlings in particular I sowed the seed in a cigar box of garden soil. I placed the box on the ground in a hot bed and watered them nearly every day as the bed was very warm and the glass was not very tight.

In this packet of seed there were perhaps fifty seeds all of doubtful origin, some of this seed may have been several years old as cacti were not in very great favor at that time and it is well known that many seedsmen do not discard the previous year's seed when the new crop ripens, particularly is this true if the seed is not in very great demand and is not easily procured. I succeeded in getting just one seedling which I was fortunate in keeping alive until it is now a nice sized plant although I do not know the variety. I was disappointed but not discouraged because I believed I had not treated the seed as it should have been treated. I thought that I had watered the seed too much as the cacti are desert plants and by this time I had done some reading and corresponding. I found that cacti were considered very difficult to propagate from seed and as one person in the West wrote me, "I have had practically no success propagating cacti from seed, as about only one in a thousand sprouts and if it doesn't die to start with it takes forever to develop into what one might call a plant." Naturally this was discouraging but I had obtained a quantity of seed from the late C. R. Orcutt and I was going to give them a try. I sowed the seed in very sandy soil in cigar boxes and placed in a small greenhouse. I watered only occasionally and gave them a very high temperature during the day, desert conditions, I believed. After an exceedingly long time I had just three seedlings, two of one variety and one of another. Not another seed would germinate and I finally lost the three seedlings.

Well, I did a lot of reading and I found that the cacti were descended from tropical plants and I remembered that Darwin said "ancient and extinct forms often resemble in their adult state the embryos of existing species of the same class." That being the case cacti seedlings should have the same peculiarities as their ancient progenitors, that is they should take kindly to the tropical conditions their ancestors were subjected to. I was sure this was the case so I purchased a quantity of seed in Mexico and set to work to give them real tropical conditions.

First a quantity of real humus was obtained; I used what remained of an old strawpile which must have been all of ten years in the open. This humus was mixed with equal volume of sharp sand. It was sieved several times through a quarter-inch sieve and placed in a deep bench in the greenhouse. This bench is so constructed that heat may be applied through the bottom. This made the soil quite warm. It would be advisable to treat the soil at this time to a good fungicide such as Semesan although I have never done it as yet. A number of NEW flower pots or seed pans should be obtained and filled to within one inch of the top with the above mentioned mixture which should not be firmed too hard but should be level. These pots are placed in the bench mentioned above and surrounded to within a half-inch or less of the top by more of the above-mentioned mixture which should be firmed quite well to prevent settling; the whole is then watered with a very fine spray such as that obtained by an insecticide sprayer until saturated. After allowing the bed to stand a day or so the cacti seed are very carefully sown upon the surface of the soil in the pots.

It is advisable to sow each variety in at least two pots even though you have only a small quantity of the seed as I found that one got nearly every seed to germinate or he got practically none and by having two plantings, even though they are side by side one has a much better chance of getting a large percentage to germinate. The smaller seeds are then covered with a covering of fine sifted sand to a depth not greater than the height of the seed. Most *Mammillarias* have small seed as well as many *Echinocactus*. The larger seeds such as *Cereus marginatus* may be planted to a greater depth.

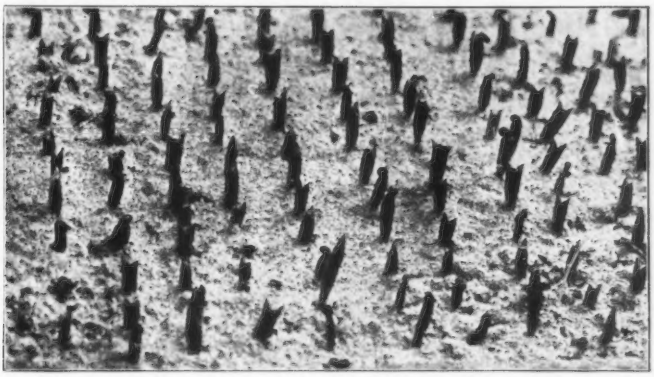
After sowing, tightly cover the bench above the bed with glass sashes or pieces of plate glass allowing three inches or more space above the seeding. Do not water at this time as there should be sufficient water in the bed from the soaking it received the day before and any watering at this time would have a tendency to wash out the seeds. The temperature is now raised by means of bottom heat until the air above the soil is at

least seventy degrees at its coldest period during the night. The day temperature may be higher up to one hundred degrees. Lastly, spread a sheet or two of newspaper over the glass cover so that the sun's rays can not shine upon the seeding and wait.

In about three days the *Cephalocereus senilis* will begin to germinate followed by the other species up to several weeks. Do not disturb the plants at this time. If the soil surrounding the pots appears to be drying, water very gently with the sprayer. Under no conditions allow the bed to dry at this time, this is the purpose of having the soil surrounding the pots higher than the soil in the pots as the soil in the higher level dries first which is the warning that water must be given soon. If one keeps the glass cover fairly tight less watering will be necessary. It is preferable to water in the morning and should be done at this time whenever possible.

Every day the cover should be lifted, the moisture estimated to see if there is enough to last the day out and any weeds carefully pulled out. If one does not pull the weeds as soon as possible they will make a remarkable growth in a very short time and when finally pulled will break up the soil to a greater extent thereby injuring the roots of the seedlings. It is not a great loss for a large cactus to lose its roots but for cacti during the cotyledon stage it is nearly always harmful.

After germination is nearly over one may remove the paper from the cover on cloudy days—later the cover may be removed—that the seedlings may not grow too spindling. When the cotyledon stage is well passed the seedlings may be transplanted into flats of the same soil mentioned above, preferably in the morning of a bright day. The flats are watered every day or two with the sprayer and kept in the greenhouse but as the weather becomes warmer they should be shaded with cheese cloth or something equally suitable. During the dormant period the flats may be kept more or less dry, only an occasional watering being necessary, but it is advisable to keep them from too much cold. Sixty degrees should be about right. The following Spring the plants may be transplanted or allowed to grow on in the flats another year. Each time the plants are transplanted the soil should approach that used for mature plants. The first transplanting may take place as soon as the plants are large enough for one to handle or if the plants get so crowded that it becomes imperative. I believe that the longer one waits for the first transplanting, within reason, the better. At all times one should be on the lookout for fungus or "damping off" as it is called. If one sees any trace of "damping off" the plants should be immediately treated to a fungicide such as Semasan or dusted with Hammonds' Grape Dust.



Month-old seedlings of Cephalocereus senilis

I believe the whole secret of propagating cacti from seed lies in adapting the soil, temperature and moisture to the stage which the seedling is in; during the germinating and cotyledon stage —tropical or Savannah conditions and from there down to desert conditions as the plant approaches maturity.

It sometimes happens that all the seed of one variety will not germinate at one time but will seem to germinate in waves. I had a batch of *Opuntia bulbispina* that did this to a remarkable degree. After being in the bed about two weeks five seeds germinated. After about a month I transplanted these five, leaving the pan in the bed. About two months after the first five plants germinated we had several real warm days in a row; the following week every seed remaining germinated. At least I believe every seed germi-

nated because I looked through the soil very carefully and could not find a single seed and they were planted in a three and one-half inch pot. The seed of this plant is all of ⅛-inch in diameter.

One thing to bear in mind is, do not sow the seed too thickly but sow as if you expected every seed to make a plant or you will have the seedlings coming up like grass. I lost a large number of seedlings through drying up during the cotyledon stage and later from "damping off." One can lose a whole pan overnight from "damping off" and nearly as many during the day by drying up because of lack of water. I must have lost several thousand last Spring from these two causes before I was aware of what was going on. In California and other countries of high elevation or arid conditions the "damping off disease" might not cause any trouble but then the drying up of the plants during the early stages would be more troublesome and would require more frequent watering and watching.

It would be desirable to use only fresh seed if one can procure it. Even if ageing does not prevent a seed from germinating it surely weakens it to keep it indefinitely and also tends to make the seeds more uneven in germinating.

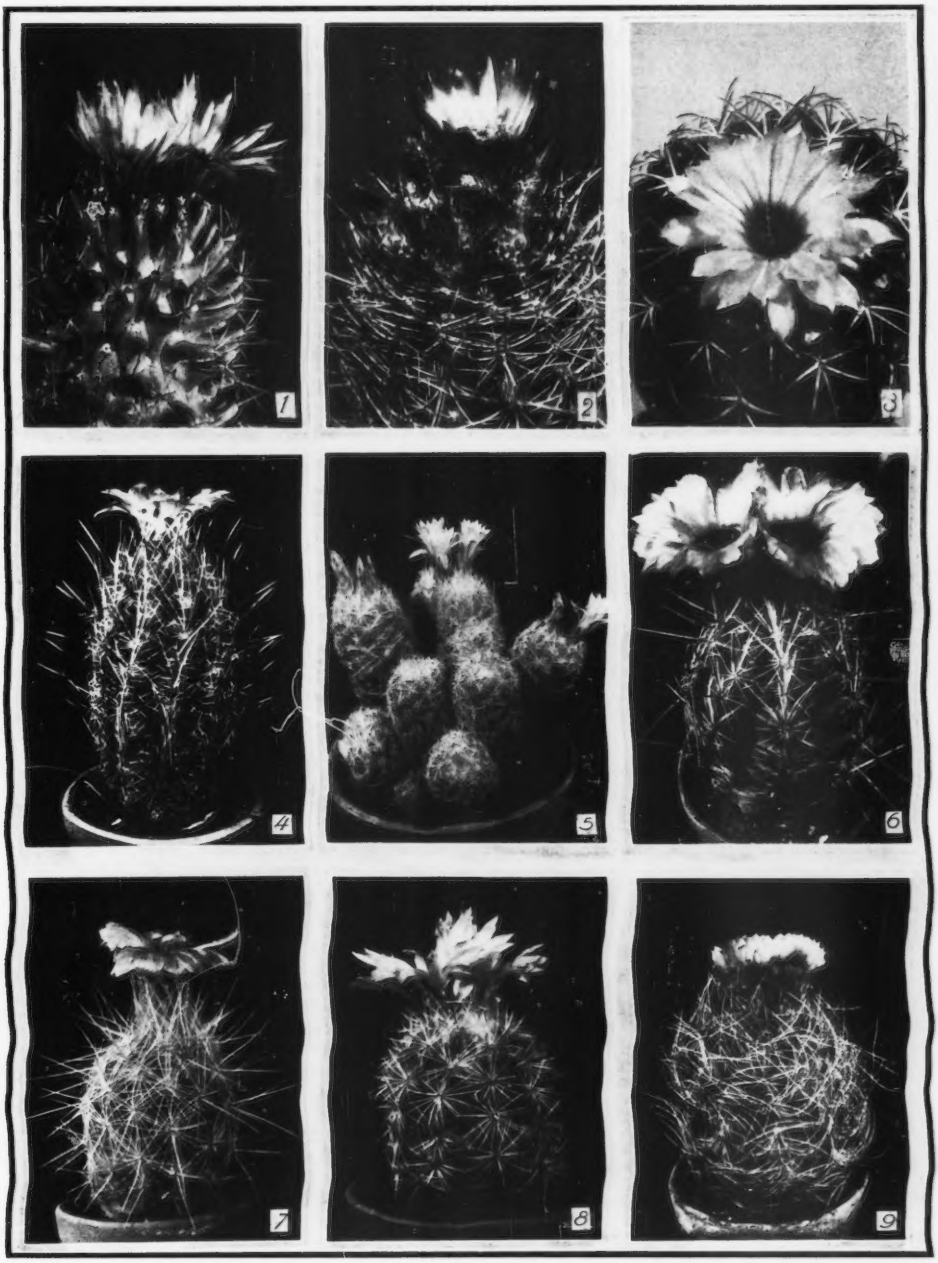
If one has a greenhouse large enough, the seedlings may be made to produce a much greater growth than otherwise by transplanting the seedlings into benches which may be supplied with bottom heat instead of flats. The benches should have at least eight inch sides instead of the usual six inches. The soil in the bed should be the same as the above mentioned mixture and should be about three inches deep. This allows a space of at least three inches above the soil upon which the seedlings should be planted in rows and spaced about two inches for *Mammillarias* and other dwarf species and about three inches for the *Cereus* or other large growing species, each way. The top of the bench is to be covered over with glass at the approach of winter or if the plants show a tendency to go dormant. I use a number of pieces of plate glass about a foot wide. The glass should have a slant to one side so that the condensation may not drip upon the plants. They should be kept moist and never below seventy degrees at any time by means of bottom heat. During bright days the temperature should not be allowed to go above one hundred degrees. This can be prevented by shading the bed or removing a few sections of the glass. In commercial plantings the latter method would not be advisable as the plants would be in poor condition for shipping and change of conditions during the winter, although if the plants are to be grown until the following fall, being allowed to go dormant at that time, the increase in growth would well repay one for the added expense.

By this time my readers no doubt are saying, "What are the advantages of this method and why go to all this trouble and expense?" All I can say is that I get at least fifty per cent germination out of each and every variety and in many cases nearly every seed sown, by following the above method and that is in New York State where one does not get near the amount of sunshine one may get in California and other arid countries.

TWO INTERESTING SPECIES OF CEREUS

Among the many interesting specimens in the attractive cactus garden of Dr. A. D. Houghton, of San Fernando, California, the writer was shown plants of two species of *Cereus*, viz., *C. jamacaru* and *C. obtusa*. There are also three or four very distinct forms which are all seedlings of a somewhat variable *Cereus* called *C. peruvianus* by most botanists. But Dr. Houghton thinks that *C. peruvianus* may be a first generation hybrid between the two species mentioned above since it is intermediate in certain characters and has produced highly variable progeny. It would be of interest to rear larger numbers of seedlings of *C. peruvianus* and to determine the range of variation exhibited among them. Crosses between *C. peruvianus* and the two species in question should also throw some light on this problem. While waiting for additional genetic data some cytological observations would probably be of assistance. Thus far the Cactus Family seems to have been overlooked by the cytologists, at least in so far as the chromosomes are concerned. These interesting forms of the genus *Cereus*, therefore, offer a virgin field. The cytological investigations should not be limited to a study of the number and morphology of the chromosomes in somatic cells of the two pure species and the supposed hybrids. The behavior of the chromosomes in the reduction division of the pollen mother cells is very apt to throw light on the question of hybridity of the suspected forms.

E. B. Babcock,
Prof. of Genetics, U. of Cal., Berkeley.



Plants from Collection of Count F. M. Knuth Knuthenborg, Bandholm, Denmark

1. *Coryphantha clava* (Pfeiff.) B & R., Mexico.
2. I think that this is *Escobaria dasyacantha*, but it may not be.
3. *Coryphantha elephantidems* (Lem.) B & R., Central Mexico.
4. *Thelocactus bicolor* (Gal.) B & R., var. *tricolor*.
5. *Escobaria sneedii* B & R., Texas.
6. *Thelocactus bicolor* (Gal.) B & R.
7. *Thelocactus bicolor* (Gal.) B & R., var. *bolansis*.
8. *Neolloydia conoidea* (De C.) B & R., Mexico.
9. *Neolloydia beguinii* (Webber) B & R., Coahuila, Mexico.

—A.D.H.

THE CACTUS AND SUCCULENT SOCIETY OF AMERICA

Headquarters: Los Angeles, California
An International Society for all lovers of Xerophites

Officers of the Society 1930
Honorary President, N. L. BRITTON, Ph.D., Sc.D., LL.D., Etc.
President Emeritus, A. D. HOUGHTON, M.D., Ph.D., F.R.H.S., Etc.
President, R. E. Willis, 2721 Bellevue Ave., Los Angeles, Calif.
Secretary, Boyd L. Sloane, 1421 Dominion Ave., Pasadena, Calif.
Treasurer, Margaret Bonynge, 103 N. Mansfield, Los Angeles, Calif.
Librarian, G. A. Frick, 1800 Marengo St., Los Angeles, Calif.

1st Vice Pres., Edward W. Lawrence
2nd Vice Pres., E. O. Orpet
3rd Vice Pres., Wm. Hertrich
4th Vice Pres., James West
5th Vice Pres., Ann G. Powers
6th Vice Pres., Mrs. A. E. Harris
Editor, Scott Haselton
Executive Board, J. A. Ekdom
Executive Board, Dr. Grace P. Nickerson
Executive Board, Dr. Willannie Breden

PRESIDENT'S COLUMN

Last August we held our first Annual Cactus and Succulent Show. It was a great success from every standpoint. This year, in the latter part of May, we will hold our second one and "Believe it or not" it will be some show.

Nearly every one who exhibited last year resolved at that time to add to his collection and have a much better showing for this year. Also a number who did not exhibit last year have been quietly adding to their collection with the idea of making a clean-up this year and from what I have seen and heard, I am sure the result of all this will be a bigger and better show. Let's all get together and give it a push.

The premium list will be so arranged that every exhibitor will have an equal chance whether his collection be large or small provided of course his plants are worthy. Make an exhibit if only one plant. Begin now to plan your exhibit. You may rest assured the errors that developed last year will be eliminated this year.

We will need many more prizes for this show as there will be many more exhibitors. Any of the following will be very acceptable: cups, plants, any article of value, and cash prizes. If you are planning to contribute any of the above, please signify your intention as early as possible.

CARE OF CACTUS

In last month's "Journal," I said that I would tell you how to treat our local desert plants after you had secured them. I had in mind principally *Ferocactus acanthodes* (see cover illustration of last August "Journal"), commonly known as the barrel cactus, which seems to be a very common name for it in different sections of the U. S. and Mexico. Almost any cactus that grows to any size and has a globular or cylindrical shape is called barrel cactus. I wonder if this common name has anything to do with its popularity among our cactus bootleggers! *F. acanthodes* has also been known by collectors here and in Europe for a number of years as *Echinocactus cylindraceus* (see Page 15 last July "Journal").

The suggestions below will apply equally as well to many other varieties of cactus among which are the following: *Ferocactus lecontii, F. covillei, F. johnsonii, F. wislizeni, Homalocephala texensis, Echinocactus horizonthalonius, E. polycephalus.* I mention these because they are the ones most commonly seen in small collections and are natives of Southern U. S. from Texas westward. If you collect your plant from the desert, be careful not to bruise the under side. If you intend to buy it, examine the under side and if you find the skin broken, don't buy it. You will nearly always find the roots broken or twisted, which does not matter, as most or all roots should be cut off, certainly all that are injured.

Place the plant in a dry location where the air or wind can get to it but not in the hot sun, for at least a week. Six months will not seriously harm the plant.

Select the dryest part of your garden for these plants. With rocks or anything you have available, build above the surrounding ground a mound at least 4 inches high or more, 10 inches is better. Fill this space with a mixture of one part each loam, sand, small rocks or bricks, old plaster or mortar, a small amount of wood ashes and a very little leaf mould. Plant your cactus in this and do not water all summer. By the time the winter rains come, your plants should be established and will survive the wet weather. The following summer you can water, perhaps once a month. Direct a strong stream of water directly on the plant. This will somewhat clean the accumulation of city dirt from the plant and spines.

In the open garden in the city, the bright, clean looking spines soon become a drab, dull color. This is mostly caused by the same reason your windows get dirty. If the hose water does not clean the spines to your satisfaction, try *bon ami* on each spine, if you have time.

Small plants will show growth the second year. Plants as large as your head and larger will grow but very little and one 2 feet or more tall will remain two feet indefinitely.

If you keep your plants in pots, the same mixture of soil with perhaps a little more loam added will be found quite all right and being in a pot, you can risk a little more water than in the ground.

Never plant cactus too deep in the soil. The varieties here referred to, do best if set only just deep enough to rest firmly.

In reading instructions on how to grow cactus, always remember that what you read is one man's idea, many other ideas may bring equally good results. However, I do know if you follow these instructions, your plants will not die from water rot.

In closing, I wish to mention two other cactus that are native of Southern California and that seldom survive long in a collection.

Sclerocactus polyancistrus, one of the most beautiful cactus we have, with an almost solid mat of rather long and slender white and pink spines, and *Phellosperma tetrancistra*, the rather small plant from the Devil's Garden district with fine hooked spines. These plants can be retained

indefinitely in a collection if you will keep them in pots, in partly shady dry location and out of the cold winter rains. Water very seldom.

Next month I will try to prove to you that the different contributors to the "Journal" in the past, on the subject of watering cactus, were all correct.

How many plants are you going to exhibit in the May show?

R. E. Willis,
2721 Bellevue Ave.,
Los Angeles, Calif.

The Secretary's Notes

Have you been asked the object of the Cactus and Succulent Society of America? Section 2 of Article 1 reads: "This Society is formed for the purpose of stimulating interest in the conservation, and promotion of the culture and development of cactus and succulents; to further the use of a standard nomenclature; to acquire and disseminate information regarding these plants, and to encourage their production and propagation; to give exhibitions and to make such publications as seem desirable." Copies of the Constitution and By-Laws have been printed and are about ready for distribution.

The April meeting of the Society will be held at the winter home of Mrs. Swobdi Meade in Palm Springs on April 20th. Those of you who attended the Palm Springs meeting last year will recall that the meeting had the largest attendance of any during the year.

The Meade home is on Chino Drive. This street turns off the main Palm Springs road to the right opposite the school. Take your lunch and coffee cups. Mrs. Meade will supply coffee, cream and sugar. President Willis reports that Mrs. Meade's garden is in even finer condition than last year. Try to arrive by 11:30 so there will be ample time for lunch and those friendly visits so much enjoyed by many. Then at one o'clock there will be a brief business meeting. The remainder of the time will be available for visits to Palm Springs gardens including those of Mrs. King C. Gillette, and a trip to the Devil's Garden. This garden is ten miles from Palm Springs with good roads the entire distance. No addresses are planned for this meeting as it is felt that a day in the desert will amply repay us for the trip. The distance from Los Angeles is 115 miles over paved roads, and it takes about three hours to make the trip.

It will be appreciated if you will notify the Secretary of your intention to go and how many there will be in your party. This assists in planning your comfort. Mrs. Meade will present the plants for the drawing at the meeting. Let us all join in making this a real Desert Pilgrimage. The desert should be at its best at this time of the year.

On the way to Palm Springs you will pass the desert nursery of Mr. C. D. Young at Cabazon. In Palm Springs you will find the McKinney Desert Nursery. Both nurseries are well supplied with cacti of the Southern California deserts.

The February meeting was held at the home of Col. Perrie Kewen in South Pasadena. This was the first of the garden meetings of the year and was well attended. Col. Kewen proved the genial host, as usual. His gardens are in excellent condition and the setting overlooking the valley is delightful. The brief business meeting was held in the spacious living room and, large as it is, could barely accommodate those present. There was no speaker, Mr. J. A. Ekdom, chairman of the Show Committee reported on the progress of the committee in arranging for the show to be held the latter part of May. Further information concerning the show will be found elsewhere in this issue.

The plants presented at the February meeting were the gift of Mr. John Dinsmore. Mr. Dinsmore recently opened a cactus nursery on Whittier Boulevard, Montebello. The winners of the plants were H. M. Wegener, Los Angeles; Mrs. Kate E. Walker, Santa Barbara; Donald Kissinger, Los Angeles, and Mrs. J. W. Keyes, of Hawthorne.

Have you considered contributing a prize for the show? A suggestion: Members of the Society from states other than California unite in presenting a State Prize from their respective states.

Speaking of states reminds us of membership. Did you know that Texas ranks second in the number of Society members and that the distant little state of New Jersey ranks third? California is the home of the Society and the leader in membership.

Mrs. Jack Ryan of New Jersey reports on the native cacti of her state. She reports an Opuntia from Southern New Jersey. It is usually found growing in white sand and completely hidden by tree leaves. It is able to withstand zero temperature.

C. S. Cowley of Arizona reports for his state native cacti as follows: Opuntia, thirty-one species; Echinocactus, seven species; Echinocereus, fourteen species; Neomamillaria, thirteen species; and the Peniocereus greggii. We thank these members and trust that other states will respond.

Col. Kewen speaks of the danger of cleaning cacti with water. Mr. Cowley has overcome this difficulty. He uses an eight-inch bellows for the purpose and says that it is especially good for dusting the centers of *Neomammillarias*.

It may not be amiss to remind many of you at this time that your subscription will expire with the June number. Plan not to miss a single number and get your renewal in on time. The law does not permit a magazine to be continued unless renewed by the subscriber. Several letters are received weekly inquiring about back numbers. Some issues have been exhausted and the supply of others is becoming limited. The only safe way to get all numbers is not to let your subscription lapse.

May I repeat a former announcement and state that the annual dues are three dollars and include the subscription to the Journal. The second member in your family may become an associate member with annual dues of one dollar. There is no distinction in the type of member except that the associate member does not receive the Journal.

Our Librarian and Business Manager, Mr. G. A. Frick, spent two days at the Encinitas Flower Show which closed February 23. One of our members, Mrs. Helen McCabe, won the prize for the best exhibit of rare cacti and succulents.

Our President Emeritus, Dr. Arthur D. Houghton has recently been honored with the presidency of the Pacific Slope Horticultural Association.

Will the members of the Society who are in the nursery business please advise the Secretary of their particular line.

Boyd L. Sloane,
1421 Dominion Ave.,
Pasadena, Calif.

Mail subscriptions to Boyd L. Sloane, 1421 Dominion Ave., Pasadena, Calif. Subscription price $3 per year with or without membership; foreign $3.50.

I enclose herewith $ for one year's dues in the Society and one year's subscription to the *Journal of the Cactus and Succulent Society of America.*

Name.....

Address.....

City..... State.....

Return or Forwarding Postage Guaranteed
Cactus and Succulent Society
of America
1800 Marengo St., Los Angeles, Calif.

SEC. 435½ P. L. & R.
U. S. POSTAGE
Paid
Los Angeles, California
Permit No. 2317

BEGINNERS' CACTI SEED

Assortment for $1.00 contains seeds of the following separately marked: Astrophytum, Cephalocereus senilis, Cereus, Echinocereus, Echinocactus, Mammillaria, Opuntia and Echinopsis. These seeds can also be had separately in twenty-five and fifty cent packets. Send for our complete price list.

THE CACTUS SEED IMPORTING CO.
4821 Strong St., Chicago, Ill.

Fehlerbuch der Kakteenzuchters & Kakteenzucht Leichtgemacht

By W. von ROEDER

Two books in German on Cactus culture, in heavy card board binding, with 88 illustrations in each book and 100 pages. Price $1.10 each. Address Journal of Cactus & Succulent Society of America, 1800 Marengo St., Los Angeles.

BRAND-NEW
CACTUS NURSERY
All Kinds of Cacti and Succulents
JOHN'S CACTUS NURSERY
Pottery, Volcanic Rock, Flag Stone
2203 Whittier Blvd.
Montebello, Calif.

WANTED

Books and pamphlets on cacti and other succulents; especially on opuntia. Also back copies of the German Cactus Journal. Address Mrs. John D. Wright, Box 554, Santa Barbara, Calif.

RARE EXOTIC **CACTUS**
SEEDS AND SEEDLINGS

125 species of fresh Cactus seed imported directly from Mexico. 5c to $6.00 per gram named species.

Large amount of seed of many species on hand including the following:

Coryphanta Andrea, per fruit	15c
Coryphanta Ottonis, per fruit	10c
Coryphanta species No. 1 and No. 2, per fruit	10c
Neomammillaria dealbata, per fruit	10c
Neomammillaria bicolor var., per fruit	10c
Neomammillaria camptotricha, per fruit	5c
Neomammillaria dolichocentra, per fruit	5c
Neomammillaria hidalgensis, per fruit	10c
Neomammillaria praelii, per fruit	10c
Neomammillaria stella-aurata, per fruit	10c
Neomammillaria pseudoperbella, per fruit	15c

List free on request.

EUGENE R. ZIEGLER
Spencerport, N. Y.
Representing Ferdinand Schmoll
Cadereyta, Mexico

CACTUS SEED SPECIAL

Cephalocereus senilis (old man)	1 gram .75
Carnegia gigantea (Cereus)	1 gram .75
Echinocactus grusonii	1 pod .75
Seed of U. S. Natives	1 pod 5c & 10c

Have all kinds of rare cactus and succulent plants. Indian and Mexican Pottery. Watson's Book on Cactus Culture, $1.50.
McCABE CACTUS GARDENS
6721 IMPERIAL AVE., RT. 3, SAN DIEGO, CAL.

LITERATURE ON CACTI AND SUCCULENTS
new or second-hand, always in stock
FERD. MAREK, Nuernberg 10,
Germany

The January number of the "Journal" is the best yet. Most interesting of all so far. It seems each number beats the last one by leaps and bounds. Then February issue came—even more beautiful. Like a tonic for a cactus crank.

OTTO H. ROLLER,
Union City, New Jersey.

Die Welt Der Pflanze, is a new book just off the press and received by the Librarian. It has 46 full page illustrations of cacti and is on sale through Friedrich Adolph Haage, Jr., Erfurt, Germany. Price $1.00.